Planning for a Call for Power

Workshops for First Nations and Independent Power Producers

November 28, 29, and 30, 2023

BC Hydro
Power smart

Agenda

9 am	1.	Welcome
	2.	Update on engagement and planning to date, and the approach to today's workshop
	3.	Proposed First Nations Economic Participation Model
	4.	Electricity Purchase Agreement Term Sheet
11 am		Coffee break
	5.	Request for Proposals Summary
	6.	Evaluation Framework
12 pm		Lunch
	7.	Transmission System Information
	8.	Interconnection Information Updates
	9.	Environmental Assessment Office Process
2 pm	10.	Wrap up and Next Steps

BC Hydro
Power smart

Today's Goals

1. Provide information on the key elements of the process
2. Answer questions
3. Encourage feedback on these elements at this session and through our on-line questionnaire.

BC Hydro
Power smart

Context for our discussion

- The documents for today's session are provided solely for the purpose of advancing discussion with BC Hydro and interested parties. They do not create any legally binding obligations, rights or liabilities between BC Hydro, and any parties.
- These documents are in draft format and their content remains subject to change as BC Hydro engages
- The final format of the Call for Power documents, including the RFP and EPA, remain subject to BC Hydro approval processes.

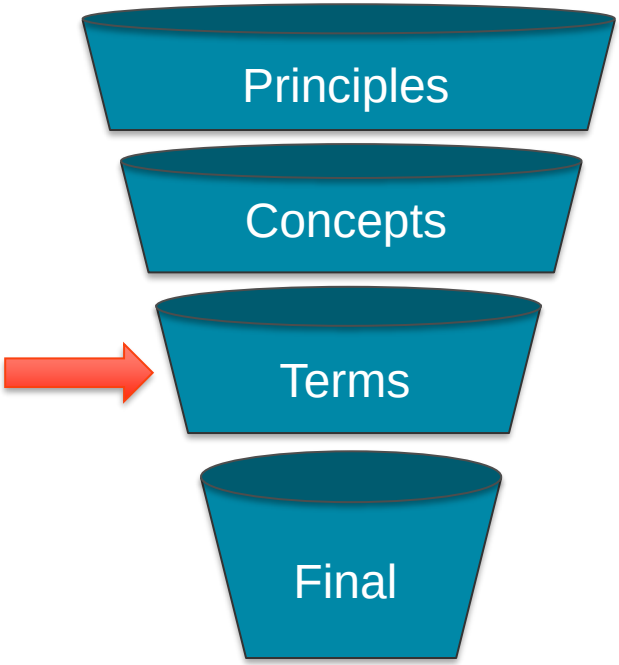
BC Hydro
Power smart

What we're looking for

- **Energy** profile aligned with our needs: approximately 3,000 GWh/year
- Connect to BC Hydro's **existing system**
- **Cost-effective** energy
- **Reliable delivery**: starting as early as 2028
- **Larger clean or renewable projects**
- **First Nations partnerships and collaboration**

BC Hydro
Power smart

Where we are at in the process



- Releasing key terms
- Considered the feedback to date in developing these terms as well as considering our customer interests, regulatory considerations, and our policy framework.
- In this Phase 2 of our engagement we are continuing to seek feedback, and in some cases signal where terms may land.

BC Hydro
Power smart

Schedule & Engagement

Phase 1 engagement
Information Sessions
First Nations Discussions
Industry focus group sessions

Phase 2 engagement
Sep: First Nations Workshops
Oct 12, 17 & 19: Engagement workshops on draft terms and call processes
Nov 28, 29 & 30: Engagement workshops on the draft EPA term sheet and call processes
Jan: Release specimen EPA and RFP drafts for comment

BC Hydro
Power smart

First Nations Economic Participation

Dina Matterson

BC Hydro
Power smart

First Nations workshops statistics

Strong participation and engagement during the First Nations workshops in September

Engagement	Dates	# of attendees
Five in-person workshops 	• Sept 13 – Kamloops • Sept 14 – Vancouver • Sept 18 – Fort St. John • Sept 21 – Terrace • Oct 11 – Vancouver (North Coast First Nations)	**65**
Three virtual workshops 	• September 22 • September 25 • September 26	**33**
Total Number of First Nations 52		

Summary Report is available on the Call for Power website

BC Hydro
Power smart

Summary of participation model feedback

Key themes that emerged from First Nations workshops and 1:1 meetings

- Support for equity ownership.
- Support for a model that maximizes the freedom for First Nations to choose what benefits they receive without BC Hydro involvement.
- Support for a model that incentivizes cooperation among Nations.
- Many Nations noted that access to capital must be provided to support First Nations participation.
- Many Nations supported a carve-out (partition) of power that would be reserved for First Nations projects.

Refer to the Phase 2 First Nations workshop summary report.

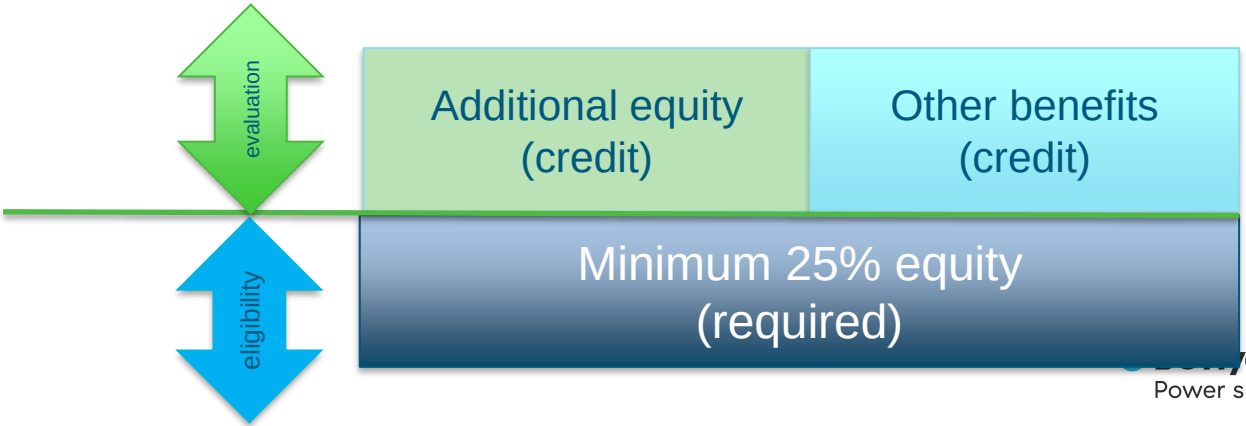
BC Hydro
Power smart

Proposed Participation Model

For further engagement

"EQUITY PLUS"

- Minimum 25% First Nations equity ownership – **eligibility** requirement
- First Nations letter confirming economic benefits other than equity ownership – **evaluation** criterion
- Additional equity ownership – **evaluation** criterion



Power smart

Recommended Participation Model

Eligibility and evaluation details

Component	Summary of Contents
Eligibility Requirement	• One or more First Nation(s) in whose territory the project is located, hold a **minimum 25% of equity ownership** in the entity owning and controlling the generating assets. • Proposals that do not provide confirmation of a minimum 25% First Nations equity ownership are disqualified from the Call for Power.
Evaluation Criterion	**Additional Equity Ownership**: A proposal will be given credit in the evaluation for additional First Nations equity ownership beyond the 25% minimum eligibility requirement up to 51%. The credit will be 12 cents per megawatt-hour for each percentage point above 25%, up to a maximum $3 per megawatt-hour for 51% equity ownership.
Evaluation Criterion	**Other Economic Benefits**: A proposal will receive a $1 per megawatt-hour credit in the evaluation if it is supported by a letter from one or more First Nations in whose territory the project is located, who are not equity owners of the proposed project, confirming that additional economic benefits, other than equity ownership, have been, or are to be, received.

BC Hydro
Power smart

Recommended Participation Model

Recommended model strikes a balance on the following:

- Responds to feedback we have received from First Nations
- Ensures Nations receive meaningful benefits by requiring equity ownership
- Encourages/rewards additional participation and benefits flowing to First Nations (through evaluation criterion)
- Secures affordable power — incremental costs (if any) balanced with ratepayer interests
- Achievable within a competitive procurement process

BC Hydro
Power smart

Questions on Implementation of the Proposed Model

We are seeking your feedback

Equity:

- Are there any terms, conditions, or restrictions that BC Hydro should apply to the First Nations equity ownership in each project?
- What documentation should be submitted with each bid to prove the equity requirement?
- What are your thoughts on BC Hydro's recommended approach to incentivizing additional equity ownership?

Economic benefits letter:

- What are your thoughts on BC Hydro's recommended approach to giving credit to proposals which include a letter that confirms that non-equity benefits are being provided to at least one First Nation?
- What should the letter say?

BC Hydro
Power smart

Access to Capital

Identified as a potential barrier to First Nations participation

- Access to capital was identified as a key concern among First Nations when considering the equity model.
- Canada Infrastructure Bank (CIB) implemented Indigenous Equity Initiative – loans of $5-100M for equity participation in which CIB is also investing.
- BC Hydro and CIB discussing how to apply the Indigenous Equity Initiative to fit the unique features of the Call for Power.

BC Hydro
Power smart

Questions

BC Hydro
Power smart

Specimen EPA Term Sheet

Alan Tan

BC Hydro
Power smart

Feedback received to date

- Contract term can be set longer (> 25 years) which reflects current expected life of underlying assets, can be financeable and may result in lower bid prices
- Pre-COD escalation of 100% will help reduce risk to developers
- Post-COD escalation of 25% should be higher (in the range of 50%) but the low rate will be reflected in a higher bid price
- Time of Delivery adjustment is preferred
- BC Hydro should provide a cap on the uncompensated deemed energy
- Reasonable to include early COD incentives and late COD liquidated damages

BC Hydro
Power smart

Draft Term Sheet

Key Terms	
Contract Term	• 30 years commencing on Commercial Operation Date (COD)

Pricing	• Seller to bid in fixed energy price in $/MWh ($2024)
	• Energy Price subject to:
	  • Pre-COD escalation at 100% of BC Consumer Price Index (CPI) (up to Guaranteed COD)
	  • Post-COD escalation of 30% of BC CPI (annual)
	  • Time of Delivery Factor

Delivered Energy	• BC Hydro will purchase and accept delivery of energy at the POI subject to hourly limits • BC Hydro has no obligation to accept or pay for energy in excess of the limits
Environmental Attributes	• All environmental attributes are transferred to BC Hydro
Exclusivity	• Seller will not sell or deliver any energy or environmental attributes associated with the generation to any other person
Security	• Performance Security $60,000/MW required on execution of EPA • Returned to Seller at COD (without interest)

Time of Delivery Factor

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
On-Peak	140%	132%	132%	120%	21%	21%	70%	119%	116%	124%	131%	140%
Off-Peak	125%	118%	118%	106%	17%	17%	55%	104%	102%	109%	116%	125%

- Escalated energy price is adjusted for the applicable On-Peak or Off-Peak Time of Delivery Factor
- For example, if the escalated energy price is $60/MWh, in January for On-Peak hours from 6 am - 10 pm Pacific Time, then the calculation would be $60 x 140% or $84/MWh
- Similarly, in January for Off-Peak hours from 10 pm – 6 am Pacific Time, then the calculation would be $60 x 125% or $75/MWh

BC Hydro
Power smart

Draft Term Sheet (cont'd)

Key Terms	
Guaranteed COD (GCOD)	• Seller specifies GCOD in its proposal, which will be included in the EPA • BC Hydro may designate a later date for GCOD if GCOD not achievable due to network upgrades to be constructed by BC Hydro
Commercial Operation Date (COD)	• Seller's Plant achieves COD once requirements are met including 72-hour operating test or equivalent

COD Incentives/Bonuses	• Proponent proposing GCOD between Oct 1, 2028 to Sep30, 2030 and if COD is achieved between:
	  • Oct 1, 2028 to Sep 30, 2030, [$2]/MWh bonus payment until Sep 30, 2030; or
	  • Oct 1, 2028 to Sep 30, 2029, [$5]/MWh additional until Sep 30, 2029
	• Bonus payment(s) not subject to CPI escalation or TDF adjustment & not applicable for Deemed Energy

Milestone Liquidated Damages (LDs)	• Proponent will pay LDs for failure to meet interim agreed upon project milestones (all to be specified in the EPA):
	  • Permitting complete
	  • Procurement complete
	  • Construction commencement
	• Pre-COD LDs reimbursable to the Seller (w/o interest) if GCOD is met

Draft Term Sheet (cont'd)

Key Terms	
Delay in Network Upgrades	• Guaranteed COD will be extended for delays in completion of network upgrades where the delay is solely attributable to BC Hydro
Plant Changes	• Seller cannot make changes to Seller's Plant without BC Hydro's consent
Operating Plan & Schedules	• Seller to provide long-term and annual 16-month operating plans, which will include all Planned Outages • Seller to provide weekly and day-ahead energy delivery schedules for operational purposes
Outages	• Seller will not take Planned Outages in the period from November 1 to March 31 inclusive • Seller to provide prompt notice of Forced Outage • Seller to provide 30-day notice prior to change to Planned Outage • Seller to use web-based application for communicating Outages (including third party outages) to BC Hydro • Seller required to attest Seller's Plant was operational and not in Outage for payment for Deemed Energy

Draft Term Sheet (cont'd)

Key Terms	
Curtailment for Emergency	• Curtailment for safety or system reliability issues (Emergency Conditions) at any time and Seller must comply with directions • No payment or liability during an Emergency Condition

Deemed Energy (Turn-Down & BC Hydro System Constraint)	• BC Hydro has right to turn down all or portion of Seller's generation
	• Seller may decline due to operational, technical, regulatory or fuel storage constraints
	• BC Hydro will pay for Energy that could have been generated and delivered to the POI but for:
	  • the Seller's compliance with a turn-down request (Turn-Down Energy), net of avoided costs.
	  • a BC Hydro system constraint (Constraint Energy), only after the first 72 hours in aggregate of BC Hydro system constraint(s)
	• BC Hydro will not be required to pay for any Deemed Energy (Turn-Down Energy or Constraint Energy) when Seller is in an Outage, not operational, or not capable of operating

Draft Term Sheet (cont'd)

Key Terms	
Revenue Metering	• All meters to be leased from BC Hydro • Seller to operate and maintain metering or other metering equipment at Seller's cost as BC Hydro determines may be required • Seller will ensure that Seller's Plant is equipped with SCADA capability that is functional at all times and maintained in good operating condition
Liquidated Damages	• Pre-COD – Liquidated damages payable upon failure to meet certain milestones • After COD, no liquidated damages for Seller for non-delivery, except if the Seller has committed to a Capacity Commitment
Invoices and Payment	• Seller to provide invoices (including backup documentation in electronic format) for delivered energy for preceding month and for deemed energy for month that precedes preceding month by 15th day of each month • BC Hydro will pay undisputed amounts within 30 days • Invoice disputes can be raised within 36 months • Interest on overdue payments for undisputed amounts will accrue at prime plus 2% • If the Seller assigns the EPA to another party, BC Hydro's payment deadlines will be extended, without interest or other liability, up to 90 days

Draft Term Sheet (cont'd)

Key Terms	
Suspension of Payments	• If Seller's metering has not electronically transmitted information directly or is transmitting intermittently for a continuous period of 60 days, or • If Seller's SCADA or telecommunication system have not electronically transmitted information directly or is transmitting intermittently to BC Hydro for a continuous period of [10 days], or • If there are outstanding interconnection issues that are required for compliance with the interconnection agreement, Invoice payments will be suspended by BC Hydro until issues are resolved • Interest on overdue invoices will not accrue while payments are suspended
Interconnection Agreement	• Seller must have an interconnection agreement
Regulatory Condition	• EPA to be filed with BCUC, and subject to BCUC acceptance • If EPA not accepted, either party may terminate

Power smart

Draft Term Sheet (cont'd)

Key Terms	
Termination	• Either party can terminate EPA due to counterparty bankruptcy/insolvency, payment defaults >[60/15] days or material default of covenants, representations and warranties • BC Hydro may terminate the EPA, by notice to the Seller, for certain specified events • Seller may terminate the EPA, by notice to BC Hydro, for certain specified events

BC Hydro
Power smart

Draft Term Sheet (cont'd)

Key Terms	

Termination Payment	• No termination payment by either party when terminated for Force Majeure
	• Termination Payment before COD:
	  • If EPA terminated by Seller for failure to obtain Material Permits, Seller pays $60,000/MW x plant capacity
	  • If EPA terminated for material default of BC Hydro, BC Hydro pays Seller's project development costs to date plus 15% less net realizable value of project assets
	• Termination Payment after COD: Upon termination of the EPA by BC Hydro/Seller, if BC Hydro/Seller is owed a Termination Payment, the amount owing is based on the cost of a "replacement contract" which is determined by comparing:
	  • the value of the remaining EPA term,
	  • the estimated contract quantities (and if appropriate, the actual amount and rate of generation of Energy from the Seller's Plant since COD)
	  • the price payable under the EPA; and
	  • the relevant market prices for equivalent quantities adjusted for differences between the product
	for the remaining EPA term

Draft Term Sheet (cont'd)

Key Terms	
First Nations	• In general, the EPA is expected to contain BC Hydro's typical EPA rights and Seller obligations regarding consultation and accommodation of First Nations, including provisions for specified Force Majeure events, claims by First Nations and termination rights arising in relation to consultation and accommodation, together with any revisions, additions or updates required to accommodate development of new projects, including the specific nature of the Seller's Plant and of the interconnection with the BC Hydro system • The EPA may, as applicable, include BC Hydro requirements and Seller confirmation of First Nations ownership or other benefits

BC Hydro
Power smart

Draft Term Sheet (cont'd)

Key Terms	

Capacity Commitment (optional)	• Seller to provide Energy deliveries that meet the following requirements:
	  • Specified capacity amount (MWh per Hour) for 16 hours per day, 6 days per week (HLH)
	  • From November 1 to February 28
	  • MWh per Hour could be lower than Plant Capacity
	• Liquidated damages will be payable for delivery shortfalls on this Capacity Commitment

BC Hydro
Power smart

Questions

BC Hydro
Power smart

Request for Proposals Summary

Chris Revell

BC Hydro
Power smart

Feedback received to date

Many have requested clarity on the RFP terms and timelines.

- Areas of interest include:
  - Timelines
  - Deposits, fees and security
  - Eligibility requirements

Project size:

- Only accepting larger projects will exclude many small developers
- Preferences were split between a 30 and 50 MW minimum

BC Hydro
Power smart

RFP Schedule

Milestone (proposed)	Date (proposed)
Issue RFP and Specimen EPA	April 2, 2024
CEAP Interconnection Request Pre-Submission Deadline (including study deposit)	April 8, 2024
Registration	May 1, 2024
CEAP Interconnection Request Submission Date	May 8, 2024
Proposal Submission Deadline	August 2, 2024
EPA Award	November 1, 2024

BC Hydro
Power smart

Registration

Mandatory to submit a proposal under RFP

- Registration fee = $5,000 per proponent via e-transfer
- Information about proponent and proposed projects, e.g., plant capacity, energy source, POI, COD
- Submission via BC Bid
- Required to participate in the RFP Q&A process and RFP Proponent Information Sessions

BC Hydro
Power smart

Proposal Submission

- Proposal Submission Forms
  - Commercial Proposal Form (bid parameters will be included in the EPA if awarded)
  - Project Information Form
  - Financial Information Form
- All proposal forms submitted via BC Bid
- Proposal submission fee = $13,000 per proposed project
- Bid security = $40,000/MW of Plant Capacity of the proposed project in form of Letter of Credit

BC Hydro
Power smart

Eligibility Requirements

- Location
- Project Type
- Clean or Renewable Resource
- Fuel Type
- Minimum First Nations Equity Requirement
- Point of Interconnection
- Project Size
- Interconnection Study Agreement

BC Hydro
Power smart

Bid Adjusters for Evaluation

Bid Adjuster	Description
Network Upgrade Costs	• Project-specific cost of the Network Upgrades costs that BC Hydro will incur to connect the Proposed Project to the BC Hydro system • Estimated in the Feasibility Interconnection Study
Capacity Credit	• For energy resources that can provide capacity when we need it, such as cold winter evenings when demand for electricity is high (e.g., biomass, geothermal, and storage hydro). • Wind, solar, run-of-river will not be given this credit
First Nations Benefit Adjuster (FNBA)	• Additional Equity Ownership: credit in the evaluation for additional First Nations equity ownership beyond the 25% minimum eligibility requirement up to a maximum $3/MWh for 51% equity ownership • Other Economic Benefits: a $1/MWh credit in the evaluation if it is supported by a letter from one or more First Nations in whose territory the project is located

Bid Adjusters for Evaluation cont'd

Bid Adjuster	Description
Resource Integration Costs	• $2/MWh will be applied to wind and solar resources only
Cost of Incremental Firm Transmission (CIFT)	• Projects located outside of the Lower Mainland and Vancouver Island will have the CIFT for Kelly Lake/Nicola to Lower Mainland applied where the CIFT value is $53.6/kW-year. Projects located on Vancouver Island will have a CIFT credit of $73.7/kw-year applied. • Based on the characteristics of the resource
Losses	• We are planning to assess losses. These values are still under development and are not available at this time.

BC Hydro
Power smart

Questions

BC Hydro
Power smart

Evaluation Framework

Chris Revell

BC Hydro
Power smart

Feedback received to date

- First Nation economic participation should be both an eligibility requirement and an evaluation criterion.
- Credit should be given for greater benefits that accrue to First Nations.
- Only ask for information that will actually be used in the evaluation.
- BC Hydro should clearly communicate evaluation criteria and how decisions will be made.

BC Hydro
Power smart

How we will evaluate projects

Our evaluation framework has three main parts

1. Conformity and conflict review

2. Eligibility requirements

   - Registration
   - Location
   - Project Type (new generation)
   - Clean or Renewable Resource
   - Fuel Type
   - Minimum First Nations Equity Requirement
   - Point of Interconnection
   - Project Size
   - Interconnection Study Agreement

BC Hydro
Power smart

How we will evaluate projects

Our evaluation framework has three main parts

3. Evaluation
    - First Nations consultation adequacy assessment
    - Risk Assessment
    - Commercial and quantitative evaluation (including First Nations Economic Participation evaluation)
    - Considerations beyond individual bid adjustments

BC Hydro
Power smart

How we will evaluate projects

First Nations consultation adequacy assessment

Why we do it:	BC Hydro has a duty to consult First Nations if the decision to enter an Electricity Purchase Agreement impact rights and title.
What we'll do:	Pre-EPA, BC Hydro will review consultation records – assess if consultation is adequate to that point in time.
What we don't do:	• BC Hydro will not consult First Nations on behalf of proponents. • BC Hydro will not assess determinations made by other Crown agencies (i.e., through permitting process). • BC Hydro will not enter into an EPA if proponent's consultation is inadequate.

BC Hydro
Power smart

How adjusters are applied to the bid price

The bid adjusters are applied to the bid price to represent costs and values

Bid Adjuster	Directionality	Bid Adjuster	Directionality
Network upgrade costs		Resource integration costs	
Capacity credit		Cost of Incremental Firm Transmission (CIFT)	
First Nations Benefit Adjuster (FNBA)		Losses	

BC Hydro
Power smart

How costs are allocated

	BC Hydro to Pay	IPPs to Pay	Evaluation Adjustment
Interconnection Studies		X	
Infrastructure on IPP project side of point of interconnection - Includes wheeling through or interconnection to a transmission asset owned by another party, if applicable		X	
Infrastructure on BC Hydro side of point of interconnection (Network Upgrades) - IPPs must provide Network Upgrade security	X		X
Resource Integration costs (ongoing cost) - Cost to integrate intermittent energy sources	X		X
Transmission Losses (ongoing cost) - Costs of losses to move energy through transmission system	X		X

Questions

BC Hydro
Power smart

Transmission System Information

Mike Guité

BC Hydro
Power smart

BC Hydro's Transmission System

- Load centres are the Lower Mainland and southern Vancouver Island
- Majority of generation is large hydroelectric on the Peace and Columbia Rivers
- Extra-High Voltage 500kV AC Bulk transmission system* interconnecting generation to load; also providing step-down to supply and interconnection the regional systems
- Regional systems providing for local communities, and interconnecting independent power producers from previous power calls; mostly 60kV to 287kV
- Interconnections to Alberta, the US, and to the FortisBC system

* Including one 360kV corridor

BC Hydro
Power smart

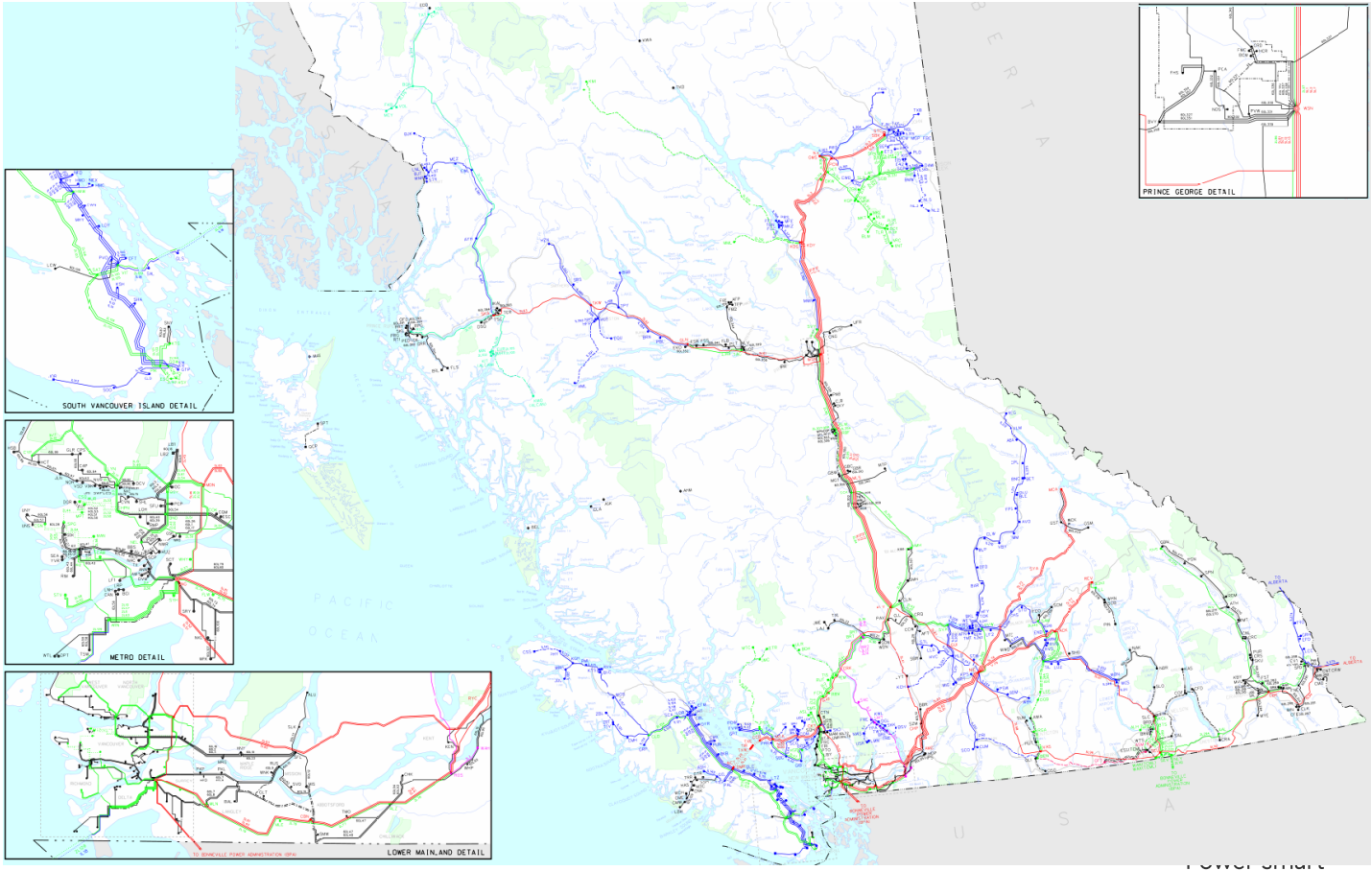

G.M. SHRUM
SITE C
PEACE CANYON
Cut-plane 1
KENNEDY
Cut-plane 3
TELKWA
SKEENA
GLENANNAN
Cut-plane 4
WILLISTON
PRINCE GEORGE
Cut-plane 2
McLEESE
SEYMOUR ARM
ALBERTA
MICA
Cut-plane 7
CHAPMANS
GUICHON
KELLY LAKE
Cut-plane 9
NICOLA
REVELSTOKE
Cut-plane 8
CREEKSIDE
ASHTON CREEK
CHEEKYE
KAMLOOPS
KOOTENAY CANAL
BURRARD
RUBY CREEK
Cut-plane 10
Cut-plane 6
Cut-plane 5
PATH
VANCOUVER
SELKIRK
DUNSMUIR
MERIDIAN
INGLEDOW
NELWAY
CRANBROOK
AMERICAN CREEK
Cut-Plane 11
CLAYBURN
VITERMINAL
ARNOTT
TO FORTISBC
VICTORIA
SEVEN MILE
PATH 3 (EAST)
MONTANA
PATH 3 (WEST)
PIKE LAKE
WASHINGTON

Transmission System Diagrams and Maps

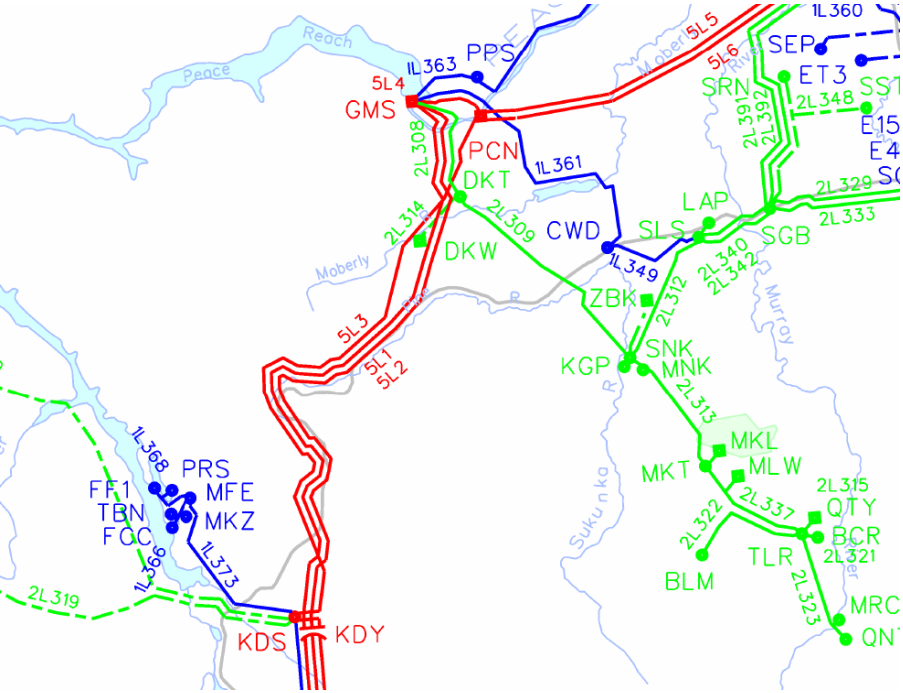
Posted on BC Hydro's Website:

https://www.bchydro.com/energy-in-bc/operations/transmission/transmission-system/maps.html

BC Hydro
Power smart


SOUTH VANCOUVER ISLAND DETAIL
METRO DETAIL
LOWER MAIN AND DETAIL
PRINCE GEORGE DETAIL
PACIFIC
OCEAN

System Designations



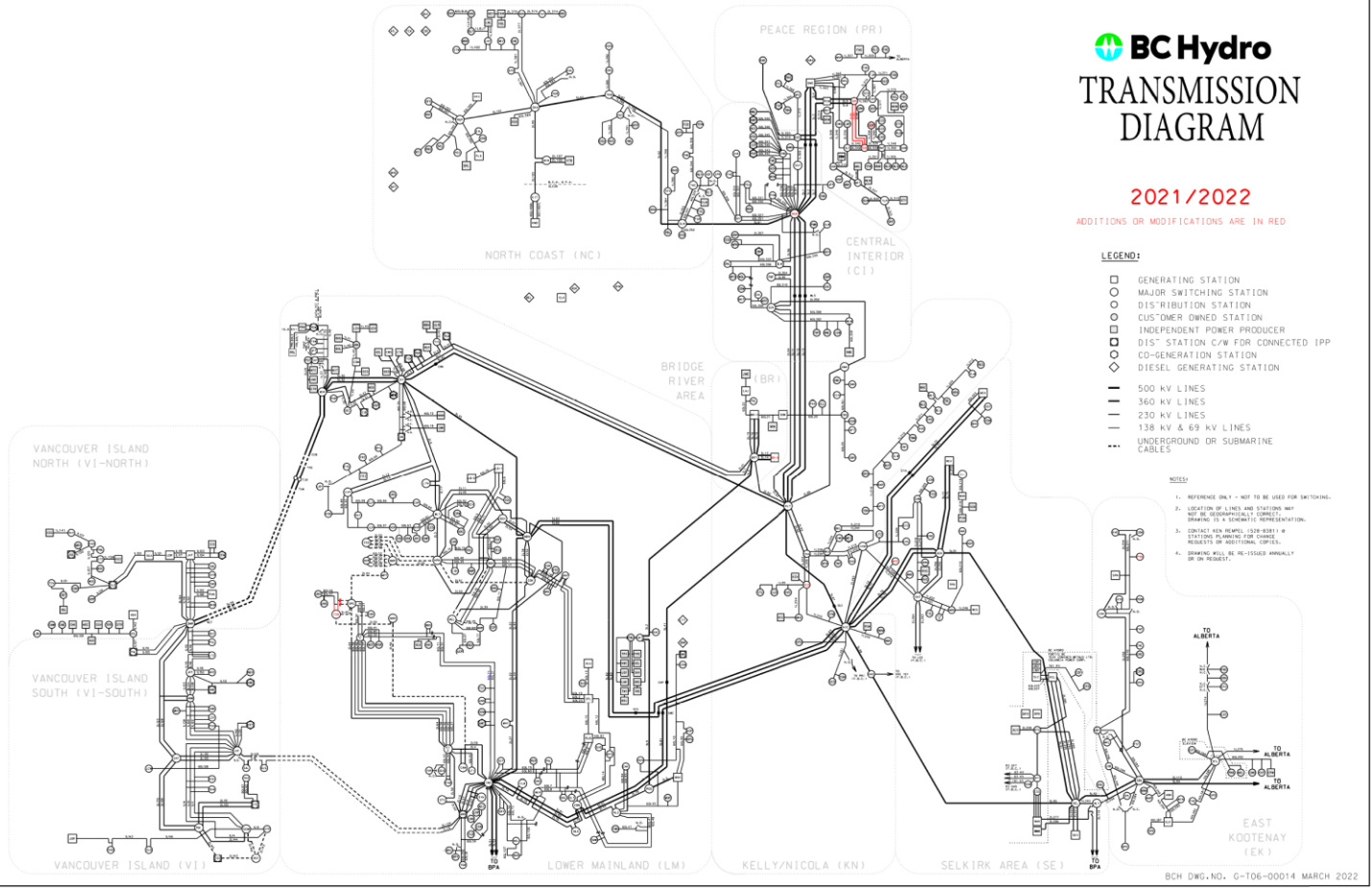
Lines are designated with an ‘L’; the first digit is the voltage; the following numbers are the Line Identification:

- 5L = 500kV
- 3L = 360kV
- 2L = 230kV
  (and 287kV in the Northwest)
- 1L = 138kV
- 60L = 69kV

Stations are designated with a three-letter code

- TLR = Tumbler Ridge Substation

BC Hydro
Power smart


BC Hydro
TRANSMISSION DIAGRAM
2021/2022
ADDITIONS OR MODIFICATIONS ARE IN RED
LEGEND:
GENERATING STATION
MAJOR SWITCHING STATION
DISTRIBUTION STATION
CUSTOMER OWNED STATION
INDEPENDENT POWER PRODUCER
DIST STATION C/W FOR CONNECTED IPP
CO-GENERATION STATION
DIESEL GENERATING STATION
500 kV LINES
360 kV LINES
230 kV LINES
138 kV & 69 kV LINES
UNDERGROUND OR SUBMARINE CABLES
NOTES:
1. REFERENCE ONLY - NOT TO BE USED FOR SWITCHING.
2. LOCATION OF LINES AND STATIONS MAY NOT BE GEOGRAPHICALLY CORRECT. DRAWING IS A SCHEMATIC REPRESENTATION.
3. CONTACT KEN REMPEL (520-8381) @ STATIONS PLANNING FOR CHANGE REQUESTS OR ADDITIONAL COPIES.
4. DRAWING WILL BE RE-ISSUED ANNUALLY OR ON REQUEST.
PEACE REGION (PR)
NORTH COAST (NC)
CENTRAL INTERIOR (CI)
BRIDGE RIVER AREA (BR)
VANCOUVER ISLAND NORTH (VI-NORTH)
VANCOUVER ISLAND SOUTH (VI-SOUTH)
VANCOUVER ISLAND (VI)
LOWER MAINLAND (LM)
KELLY/NICOLA (KN)
SELKIRK AREA (SE)
EAST KOOTENAY (EK)
TO BPA
TO ALBERTA
BCH DWG.NO. G-T06-00014 MARCH 2022

Transmission System Capacity

- We have prepared a high-level assessment of capacity on key regional transmission segments; this will be published shortly

- This is a System Normal assessment only; is a thermal limits assessment only; does not describe other limitations such as contingencies, system stability, or voltage (those covered in the Feasibility Study and System Impact Study stages)

- Assessment assumes a 50MW injection, for in-service 2029, not including major system upgrades

BC Hydro
Power smart

Regional Preference

Regional Systems	Preference priority of new resource additions	Note
Lower Mainland	Highly Preferred	Some areas with local generations may be congested
Vancouver Island	Highly Preferred	Some areas with local generations may be congested
North Coast	Preferred	Expected industrial load growth
Central Interior	Neutral	
Peace	Neutral	Some areas with local generations may be congested
South Interior East	Neutral	A preference may be given to new generators to be added close to sizable loads in the region
South Interior West	Neutral.	A preference may be given to new generators to be added close to sizable loads in the region.

Transmission System Capacity (cont.)

The system assessment includes:

- Preliminary assessment by corridor, whether the thermal capacity exists on a line or set of lines between stations
- Preliminary assessment of line position availability at selected substations
- Verified capacity and interconnection network upgrades are subject to the full study process
- The available thermal capacity under system normal is indicated with the following codes
    - Not Possible: segment highly congested from existing generation
    - May be Possible: segment may have some thermal capacity available.
    - Possible: segment thermally unconstrained for at least additional 50 MW new generators.

BC Mandatory Reliability Program

- Mandatory Reliability Standards are adopted for use in BC by the BC Utilities Commission
- BC Hydro, and existing large IPPs are required to comply with the standards
- There are changes in the registration requirements coming from NERC that, once adopted in BC, will require smaller Inverter-Based Generators to participate in the program

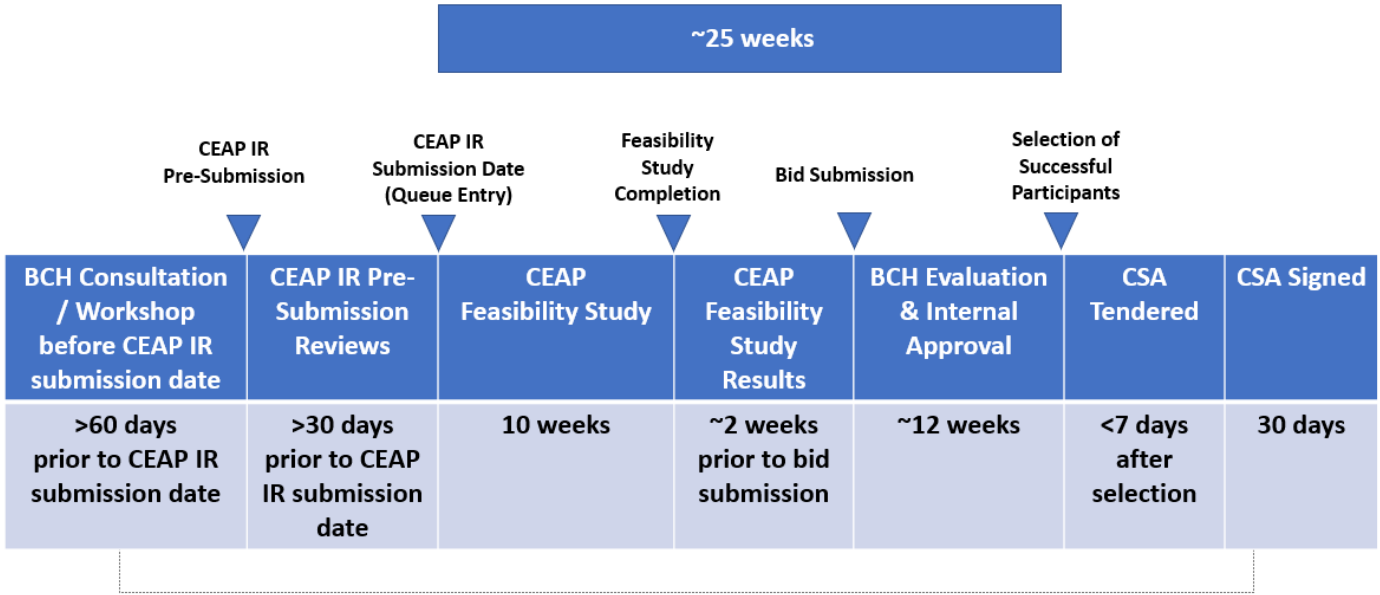
BC Hydro
Power smart

Interconnections Process Updates

Sachie Morii

BC Hydro
Power smart

Proposed CEAP Schedule



CEAP: Competitive Electricity Acquisition Process
IR: Interconnection Request
CSA: Combined Study Agreement
SGIP: Standard Generator Interconnection Procedures

SGIP*

* The process transition to SGIP for System Impact Study, Facilities Study, Implementation

Key Requirements for Feasibility Studies

1. All proposals/interconnections will have the same queue position/priority
2. All complete submissions will be studied within 10 weeks after the IR (Interconnection Request) Submission Date to be announced
3. The Feasibility Study for each proposal/interconnection will be performed independently by excluding any other proposals
4. BC Hydro plans to use a common set of base cases as starting cases for studying each of the proposals in the call

BC Hydro
Power smart

Transmission Interconnection Requirements for Power Generators

- We are revising the *Transmission Interconnection Requirements for Power Generators* document
- We are incorporating the latest NERC changes to the requirements for Inverter-Based Generation
- Publication early 2024

BC Hydro
Power smart

Review of Submitted GIDFs

- The project technical information of individual interconnections/proposals will be submitted by the call proponents in Generator Interconnection Data Form (GIDF) before the Pre-Submission date;
- BC Hydro's system planning engineers will review the GIDF submissions for completeness; if complete, the planner will confirm acceptance of the submitted data to the proponent; if incomplete, the planner will communicate the identified deficiencies with the GIDF submitter to address.
- **A proposal with incomplete GIDF submission by the IR Submission Date will not be studied and will be disqualified from the Call process**

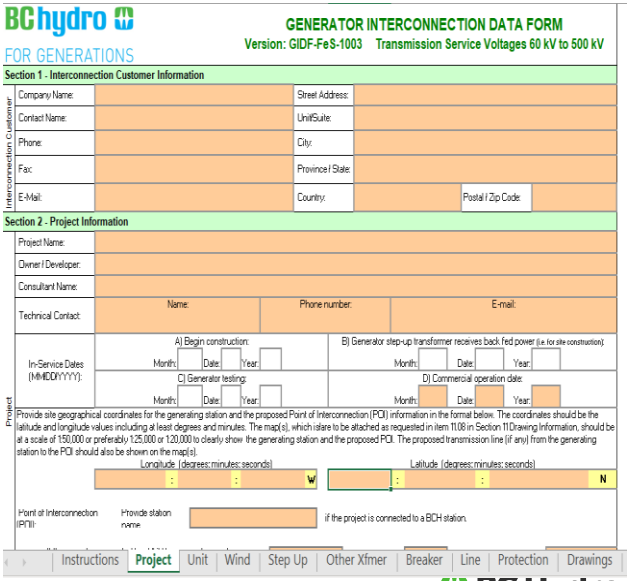
BC Hydro
Power smart

Generator Interconnection Data Form (GIDF)

A standard data input format

Covers all types of generating facilities from the call.

- Has two categories of data requests for Feasibility Studies:
  - Required data (shaded cells);
  - Additional data (non-shaded cells)


BC hydro
FOR GENERATIONS

GENERATOR INTERCONNECTION DATA FORM
Version: GIDF-FeS-1003 Transmission Service Voltages 60 kV to 500 kV

Section 1 - Interconnection Customer Information

Interconnection Customer

Company Name:		Street Address:			
Contact Name:		Unit/Suite:			
Phone:		City:			
Fax:		Province / State:			
E-Mail:		Country:		Postal / Zip Code:	

Section 2 - Project Information

Project

Project Name:			
Owner / Developer:			
Consultant Name:			
Technical Contact:	Name:	Phone number:	E-mail:
In-Service Dates (MM/DD/YYYY):	A) Begin construction: Month: Date: Year:	B) Generator step-up transformer receives back feed power (i.e. for site construction): Month: Date: Year:	
	C) Generator testing: Month: Date: Year:	D) Commercial operation date: Month: Date: Year:	

Provide site geographical coordinates for the generating station and the proposed Point of Interconnection (POI) information in the format below. The coordinates should be the latitude and longitude values including at least degrees and minutes. The map(s), which is/are to be attached as requested in item 11.08 in Section 11 Drawing Information, should be at a scale of 1:50,000 or preferably 1:25,000 or 1:20,000 to clearly show the generating station and the proposed POI. The proposed transmission line (if any) from the generating station to the POI should also be shown on the map(s).

Longitude (degrees: minutes: seconds) : : W

Latitude (degrees: minutes: seconds) : : N

Point of Interconnection (POI): Provide station name: if the project is connected to a BCH station.

Instructions | Project | Unit | Wind | Step Up | Other Xfmer | Breaker | Line | Protection | Drawings

BC Hydro
Power smart

Pre-CEAP Information Request Form

What is it?

- Open only for those who intend to submit a proposal and projects that meet draft eligibility requirements
- To provide potential proponents an opportunity to explore options with respect to the point of interconnection and project size
- BC Hydro responses will be preliminary and limited in nature, high-level and for general guidance only
- Submission on the Pre-CEAP information request is optional
    - Form will be available in the coming days
    - BC Hydro response will be via email

BC Hydro
Power smart

Pre-CEAP Information Request Form

Schedule

- Submission window opens early December
- BC Hydro's response by end of January
- Form responses will be sent to individual proponents via email

BC Hydro
Power smart

Questions

BC Hydro
Power smart

Environmental Assessment Office

Kris MacLellan

BC Hydro
Power smart

Next Steps

- January 2024: Share draft Request for Proposals and draft Specimen Electricity Purchase Agreement for comment
- April 2024: Issue Request for Proposals
- August 2024: Proposal Deadline

Submit written comments, feedback and questions on today's material by December 7, 2023 via our online questionnaire on bchydro.com

BC Hydro
Power smart

Thank you

BC Hydro
Power smart